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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,462	09/05/2003	Richard Lee Smith	1225.14	8430
21176 7590 06/25/2007 SUMMA, ALLAN & ADDITON, P.A. 11610 NORTH COMMUNITY HOUSE ROAD SUITE 200 CHARLOTTE, NC 28277			EXAMINER SOOHOO, TONY GLEN	
			ART UNIT 1723	PAPER NUMBER
			MAIL DATE 06/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/656,462	SMITH, RICHARD LEE	
	Examiner	Art Unit	
	Tony G. Soohoo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10-21, 25-33 and 35 is/are pending in the application.
- 4a) Of the above claim(s) is/are withdrawn from consideration.
- 5) ☐ Claim(s) is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-21, 25-33 and 35 is/are rejected.
- 7) ☐ Claim(s) is/are objected to.
- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. .
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u> </u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u> </u> | 6) <input type="checkbox"/> Other: <u> </u> |

DETAILED ACTION

Claim interpretation

The claim recites a mixing manifold in claim 1 "capable of mixing liquids" from the tanks, however the dependent claim 12 recites that the manifold is "capable of dispensing liquid from one of the plurality of tanks independent to the other tanks" thereby it appears that the manifold does not provide a mixture. Whereby each of the recited language is directed to the operation of the manifold, such issues is deemed to the intended use and operation of the manifold and read as understood that the limitation of the capability does not structurally limit or further define the manifold itself.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 10, 11, 12, 15, 25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair 3250218 in view of Permar 5482441.

3. The Sinclair reference discloses plural supply tanks of sources (not shown) to feed lines 1a, 1b containing liquids to be mixed; plural pumps 2a, 2b; a motor 9 connected to more than one of the drive assembly 32, 12 and 13 connected at the same time to each pump 2a, 2b; and a manifold mixer line 8. The motor 9 drives at the same

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time one drive assembly 13 and the other drive assembly 12 when connected to the motor 9. it is noted that the manifold is capable functioning to dispense liquid from one of the tank independent of the other tank at the line 29b or 29a, and also capable of mixing fluids together when both lines are connected at 8.

The Sinclair 3250218 reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of plural couplings and pump drive assemblies connected in alternating sequence in a linear series and having the motor directly connected in linear series to one end of the pump and also being in linear series to the drive assemblies (claims, 1, 10, 12, 15, 25, 35), and the exception of the pump being a diaphragm pump (claim 11), and discloses all of the recited subject matter as defined within the scope of the claims with the exception of having a third pump in connection with a 2nd coupling to control three fluid source at the same time .

The reference to Permar discloses a flow control system with a motor 10, figure 1 and especially figure 2 whereby a motor, and two variable displacement pumps 14a, 14 that is respectively connected to two different sources 28a, and 28 is connected in an linear coaxial manner to one another with intermediate coupling shaft 12 which is driven in a same coaxial direction, figure 2 to provide metering of component materials, column 3, lines 59-61, column 2 lines 58- through column 3, line 5.

In view of the teaching of Permar that one may utilize an arrangement of a drive assembly, and whereby the issue of the placement of the drives to one an other and the motor being coaxial is ultimately directed to a rearrangement of the parts. It is deemed that it would have been obvious to one of ordinary skill in the art to modify the drive

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assembly, motor and couplings between the drives and motor to a coaxial arrangement as shown by Permar figure 2 or figure 1 so as to provide a more compact or easily constructed arrangement. It is noted that the drive assembly of Sinclair would act in a same functional manner in providing a drive from the motor to the pump, but with the exception of the spatial orientation of the drive assemblies. Motivation for rearranging drive elements in a gearing or drive device may be for reasons of space considerations of the housing and the platform in which the drive is to be placed or ease of construction. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made in light of the alternate configuration arrangements taught by Permar, and thus deemed within the skill of a person having ordinary skill in the art of transmission gearing to rearrange the drive assembly to a coaxial arrangement to save space used by the gear mechanisms 12 and 13 of the Sinclair device, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

With regards to claim 11, in the art of pumps, the particular species of a diaphragm pump is old and well known as a structural functional equivalent of a pump to pump fluid. Accordingly, it is deemed that it would have been obvious to one of ordinary skill in the art to substitute the pumps of the Moffett reference with a particular choice of the functional equivalent pump species of a diaphragm pump, so that fluid is moved in a more efficient manner.

With regards to claims 25 and 35, the Sinclair reference discloses coupling of two pumps and two sources, in contrast to three pumps and three sources as claimed.

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However the addition of the third pump would operate in a coupled manner same as the second pump.. Thus an addition of a third source and coupling of a third pump would provide the advantages of mixing more than two sources thereby permitting the mixing of three sources into a mixture. Whereas the Sinclair device discloses the claimed invention except for an additional (third) pump and (third supply line tank) connected to and operating in the same manner as the second pump and supply line tank assembly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an additional pump, supply line tank, and gear in connection to the motor 9, 11, so as to expand the operation of the Sinclair device to mix three sources together, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

4. Claims 2-7, and 16-21, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair 3250218 in view of Permar 5482441, as applied in the parent claims above, and in further view of Moffett et al 5980836.

The Sinclair 3250218 reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of having a drain and it is noted that the pumps of the Sinclair device is fully capable to operate to fill the assembly and having a heater to heat the material in the tank.

The previously cited Moffett reference discloses a liquid mixing device which is fully capable to mix any liquid desired which is placed in the solution tanks 10, 12, 14,

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16, pumps assemblies 68, 36, 44, 24, 102, 84, and a manifold (in figure 1) 20, at 52, at 76, at 78, (in figure 2) 20, 20A, 78, 78A, 76, 76A, (or in figure 3) 78, 106, 20, a drain assembly see figures labeled "**drain**" to drain the system when desired. It is noted that each figure shows conduits and inherently have couplings to couple the conduits with the tanks, with the pumps, and with valves and drain such that a fluid connection is provide into a device of fluid handling system. With regards to claim 28 note that the tank 16 may be heated, column 2, line 65. It is also noted that the manner of use of the device is directed to a method of operation of the device and does not structurally distinguish the apparatus in a patentable sense and thus has been afforded little, if any patentable distinction.

In view of the teaching of the Moffett reference the a system which has plural tanks for mixing solutions delivered by plural pumps may have a drain and a heater to heat the fluid tank, it is deemed that it would have been obvious to one of ordinary skill in the art to provide a drain, heater and connections so that the device of Moffett may be flushed and drained to provide a cleaning of the system. It is further noted that the pumps of the Sinclair device is fully capable to operate to fill the assembly. Also, it is deemed that it would have been obvious to one of ordinary skill in the art to further provide appropriate heater to the tank so as to provide a the liquid source at a proper temperature for mixing.

5. Claims 13-14, 26-27, and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinclair 3250218 in view of Permar 5482441, as applied in the parent claims discussed above, and in further view of Bullard 3957203 and Atkinson 3074649.

The Sinclair reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of the system being mounted on a vehicle or mobile platform, with a cab, boom, or basket and a nozzle.

The Bullard 3957203 reference teaches that a mixed fluid material supplied in a tank 134 may be provided upon a mobile platform 12 and sprayed utilizing a boom 76 mounted nozzle 82.

The Atkinson reference teaches that a fluid delivery system from a tank 9, boom 3 and nozzle 1 may be operated from the cab at 53.

It is also noted that it is old and well known in the art of boom assemblies to provide a basket for an operator.

In view of the Bullard and Atkinson references, it is deemed that it would have been obvious to one of ordinary skill in the art to provide for the mixing device of Sinclair device with a mount upon on a vehicle or mobile platform, with a cab, boom, or basket and a nozzle for the mixer tank device so that the mixed fluid may be easily transported and delivered to particular location.

Response to Arguments

6. Applicant's arguments with respect to claims 1-7, 10-21, 25-33, 35 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amended language to the particular coupling/drive/motor alignment.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Newly cited references : Soyland et al 3723026, Sheen 2627453, Lindblom 5165862, Nonemacher et al 4158529, Virtue et al 3985472, and Moriya et al 5176504 all disclose a drive motor with driven coaxially aligned pumps which are coaxially coupled together.

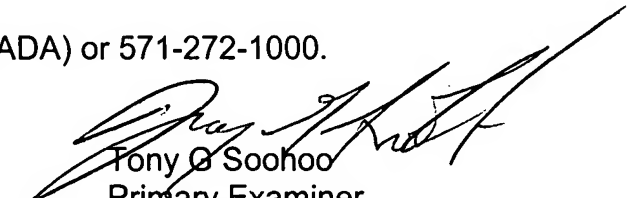
8. It is noted that the previously cited references to Surjaatmada et al 5192509, Latham, Jr 3565286, and Richardson are shown as further evidence that it is known to provide at least a single motor drive assembly to drive plural pump assemblies. Murase shows that it is known to provide a single control to control plural pumps. Previously cited references to Latham Jr 335910 and Rambin Jr. 4341508 shows knowledge in the art whereby one motor may control plural pumps.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 8AM-5PM, Tue-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tony G Soohoo
Primary Examiner
Art Unit 1723

TONY G. SOOHOO
PRIMARY EXAMINER